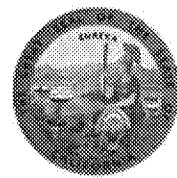




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Director and State Public Health Officer

State of California—Health and Human Services Agency  
California Department of Public Health



EDMUND G. BROWN JR.  
Governor

**DATE:** February 23, 2018

**TO:** Juanita Bacey  
Project Manager  
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**SUB:** Review Draft Radiological Data Evaluation Forms Findings Report For Parcel C  
Soil, Former Hunters Point Naval Shipyard, San Francisco, CA. Dated  
November 21, 2017.

As submitted by the California Department of Toxic Substances Control (DTSC),  
Environmental Management Branch (EMB) of the California Department of Public  
Health (CDPH) reviewed the *Draft Data Evaluation Forms Findings Report for Parcel C  
Soil, Former Hunters Point Naval Shipyard, San Francisco, CA. Dated November 21,  
2017.*

DTSC requested EMB to review Appendix C, Parcel C North Pier Data Evaluation  
Documentation and Findings, Trench Units: S001, S002 and S009, in addition to the  
main document. This review was performed in support of the Interagency Agreement  
between DTSC and CDPH.

If you need further assistance please contact Tracy Jue of my staff at (916) 324-4804 or  
via email at [Tracy.Jue@cdph.ca.gov](mailto:Tracy.Jue@cdph.ca.gov).



North Pier	Trench Unit	Box Plots	Q-Q Plots	Rounds of excavation	Gamma scan or static concerns	On vs offsite lab	Time Series	Suspect name (1=yes, 0=no)	Name, if suspect	Name, if not suspect	Signs of falsifying (1=Yes, 0=no)	Signs of falsification summary	Failure to follow workplan (1=Y, 0=N)	Signs of failure to follow workplan	Comments - Other	Followup needed, e.g. questions for Navy	CDPH Recommendation
1	S001	The Initial Systematic Samples have lower average and lower variability compared with all other samples from S001.	The initial systematic samples have nearly horizontal quantile plot for all nuclides indicating a different distribution of results compared to other samples from S001. FSS plots for Ac-228, Bi-214, and K-40 have slope breaks, indicating multiple populations.	4	Initial gamma static measurements performed between 0948 and 1017, the same day soil samples were collected on 3/12/12 (22 one-minute counts in 28 minutes). Gamma static measurements were also performed on 03/01/2013 between 1443 and 1734.	Data Consistent	From Notes, "Second round of characterization samples have different distribution from all other samples from S0001 for Bi-214, Ac-228 and K-40	1	J Cunningham R Zahensky		1	Second round of characterization samples have different distribution from all other samples from S0001 for Bi-214, Ac-228 and K-40. Anomalies were identified in S001 and it was resampled. Form notes, "Sample #65 was counted 4 days after other FSS samples collected on 11/5/12," which could indicate falsification.	1	Sampler/Surveyor not provided in FSSR	Signs of Falsification, however the Navy address the falsification in document, "Investigation Conclusion Anomalous Soil Samples at Hunters Point Naval Shipyard Dated April 23, 2014. CDPH reviewed North Pier FSS report and the Navy concluded a Sand material with elevated Ra-226 was found in SU1 but was not found in the other North Pier SUs		NFA
2	S002	NA	FSS plots for Ac-228, Bi-214, and K-40 have slope breaks, indicating multiple populations.	1	Gamma scan data set consistent with gamma static results	Data consistent	NA	1	J Cunningham R Zahensky			NA	1	Data and Time for gamma scan not provided			NFA
3	S009	Bi-214 data set has very low variability. Several Cs-137 values below zero indicating a data quality problem.	Sample 9 Reported Ac-228 at 0 pCi/g; Thorium Series radionuclides (Ac-228, Bi-212, Pb-212, Tl-208, were reported with concentrations ranging from 0 pCi/g to 0.32 pCi/g. Thorium Series radionuclides for S008 and S010 reported thorium series concentrations ranging from -0.001 to 0.71 pCi/g.	1	Gamma static measurements were also performed on 3/23/13. One static reading # 23 was above the release criteria for Cs-137. The Navy removed 15 cubic yards of soil and no static scan was provided.	Samples 8, 9, 10 Reported Activities at 0 pCi/g to 0.32 pCi/g for Ac-228, Bi-212, Pb-212, Tl-208. FSS plots for Ac-228, Bi-214, and K-40 have slope breaks, indicating multiple populations. The Cs-137 results from the offsite lab resulted in remediation of approximately 15 cubic yards of soil after onsite lab determind no results with activity exceeding the release criteria.	Sample 9, Ac-228 one final systematic sample zero, thorium series reported from 0-0.34 pCi/g Ac-228, Bi-212, Pb-212, Tl-208]	1	J Cunningham R Zahensky			Multiple logic tests were flagged for investigation FSS Samples because the last FSS sample was collected four months after the initial FSS Sampling activity. Additional Remediation and FSS Activities were performed after receipt of quality control sample reports from the offsite lab. The Navy removed 15 cubic yards of soil and no static scan was provided.	1	Sampler/Surveyor not provided in FSSR	Gamma static measurements were also performed on 3/23/13. One static reading # 23 was above the release criteria for Cs-137. The Navy removed 15 cubic yards of soil and no static scan was provided.		Resample